

Visually LEARN, REMEMBER, AND CHOOSE *the Best Classification Metrics*

Metric	Hard or Soft?	Okay with Imbalance?	FP/FN Treatment?	Use Case
Accuracy	Hard	No	Equal treatment	Standard balanced cases with no FP/FN priority
Precision	Hard	Yes	Prioritizes reducing FP	Imbalanced datasets where FP are worse; be careful not to set threshold too high though!
Recall	Hard	Yes	Prioritizes reducing FN	Imbalanced datasets where FN are worse; be careful not to set threshold too low though!
F ₁ Score	Hard	Yes	Equal treatment	Imbalanced datasets where FP and FN are equally important
F _β Score	Hard	Yes	Depends on β ; $\beta > 1$ prioritizes reducing FN, $\beta < 1$ prioritizes reducing FP	Imbalanced datasets where FP and FN are both important, but one is more important than other
ROC AUC	Soft	Skewed by high imbalance	Equal treatment	Problems that need ranking outcomes with soft probability predictions
Log Loss	Soft	Skewed by high imbalance, compare to baseline	Equal treatment	Cases needing exact soft probability predictions

